RESEARCH ABSTRACT

HUMAN NUTRITION

Title: Consumer acceptability and stability of omega-3 enriched pork products – **NPB number 09-066**

Investigator: James Hollis PhD

Institution: Iowa State University

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Scientific abstract

Pork loins from pigs that consumed a diet supplemented with 6% Gromega contained more EPA than the loins from pigs that had eaten a diet supplemented with 4%, 2% or 0% Gromega (6% > 4% > 2% = 0%). There was insufficient data to draw conclusions about the DHA content. The loin products from the pigs consuming a diet supplemented with 6% Gromega contained more vitamin E than the 4%, 2% or 0% products (6% > 4% = 2% = 0%). There was an effect of time on vitamin E content which was higher in samples at week 5 and 10 than week 0. The 6% and 0% products had a lower TBARS value than the 2% or the 4% loins and there was no effect of time on the TBARS value.

Frankfurter products made from the pigs that consumed a diet supplemented with 6% Gromega contained more EPA than the frankfurter products made from the pigs that consumed a diet supplemented with 4%, 2% or 0% Gromega (6% > 4% > 2% > 0%). There was an effect of time of EPA content and the frankfurter samples from week 10 contained more EPA than those from week 5 or 0. Frankfurter products made from pigs that consumed a diet supplemented with 6% Gromega contained more DHA than frankfurter products made from pigs that had consumed 4%, 2% or 0% Gromega (6% > 4% > 2% = 0%). There was an effect of time on DHA content of the products (week 10 > week 1 > week 5). There was no effect of feed supplementation level on vitamin E content of the frankfurter products. The TBARs value was highest in the 4% products and in the week 10 samples.

Bratwurst products made from pigs that consumed a diet supplemented with 6% Gromega contained more EPA than the bratwurst products from pigs that had consumed a diet supplemented with 4%, 2% or 0% Gromega (6% > 4% > 2% = 0%). Bratwurst products made from pigs that consumed a diet

supplemented with 6% Gromega contained more DHA than the products made with pigs that had consumed a diet supplemented with 4%, 2%, 0% Gromega (6% > 4% > 2% > 0%). There was an effect of time on DHA content of the bratwurst products and levels were higher in the week 5 and 10 samples than the week 0 products (week 10 = week 5 > week 0). Vitamin E content was higher in bratwurst products made from pigs that consumed a diet supplemented with 6% Gromega than in bratwursts made from pigs that consumed a diet supplemented with 4%, 2% or 0% Gromega (6% > 4% = 2% > 0%). There was an effect of time on vitamin E content of the bratwursts with vitamin E content being higher in the week 0 and 10 samples than the week 5 samples (week 0 = week 10 > week 5). The TBARS value was lower in the bratwurst products made from pigs that consumed a diet supplemented with 2% Gromega than in the bratwurst products made from pigs that consumed a diet supplemented with 6%, 4% or 0% Gromega (2% < 6% = 4% = 0%). There was no effect of time on TBARS values.

Sausage products made from pigs hat consumed a diet supplemented with 6% Gromega contained more EPA than the sausage products made from pigs that consumed a diet supplemented with 4%, 2%, or 0% Gromega (6% > 4% > 2% > 0%). There was no effect of time on the EPA content of the sausages. Sausage products made from pigs that consumed a diet supplemented with 6% Gromega contained more DHA than sausage products made from pigs that consumed a diet supplemented with 4%, 2% or 0% Gromega (6% > 4% > 2% > 0%). There was no effect of time on the DHA content of the sausages. The vitamin E content of the sausages was not consistent across the different products. The TBARS value was highest in the sausage products made from pigs that consumed a diet supplemented with 6% Gromega than in the sausage products made from pigs that consumed a diet supplemented with 4%, 2% or 0% Gromega (6% > 4% = 2% > 0%). There was an effect of time on the TBARS value and the TBARS value was higher in the week 0 and 10 products than the week 5 products (Week 0 + week 10 > week 5).

Current American Heart Association recommendations are to consume between 0.5g and 1.8g of DHA and EPA each day. As the recommended intake of meat each day is 90g this amount could only reliably be reached by consumption of the products made from pigs whose feed had been supplemented with 6% Gromega.